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<110> INCYTE CORPORATION; CHAWLA, Narinder K.;
      TANG, Y. Tom Tang; GRIFFIN, Jennifer A.; YANG, Yonghong G.; RAMKUMAR, Jayalaxmi;
      KHARE, Reena; RICHARDSON, Thomas W.;
      BECHA, Shanya D.; TRAN, Uyen K.;
      KABLE, Amy E.; SWARNAKAR, Anita;
      WARREN, Bridget A.; ELLIOTT, Vicki S.;
      MARQUIS, Joseph P.; HAFALIA, April J.A.
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 Thr Cys Pro Ala Val Ile Ala Cys Ser Ser Pro Gly Ile Asn Gly
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 Phe Pro Gly Lys Asp Gly Arg Asp Gly Thr Lys Gly Glu Lys Gly
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 Glu Pro Gly Gln Gly Leu Arg Gly Leu Gln Gly Pro Pro Gly Lys
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 Leu Gly Pro Pro Gly Asn Pro Gly Pro Ser Gly Ser Pro Gly Pro
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 Ser Lys Val
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Val Ser Ala Ala Val Val Ala Glu Met Ala Ser Tyr Leu Glu
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                455
                                     460
Thr Met Asn Ile Thr Leu Lys Gln Gln Leu Val Lys Val Tyr Glu
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                470
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Lys Tyr Gly Tyr His Ile Ser Lys Thr Ser Tyr Phe Leu Cys Tyr
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                                     490
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Glu Pro Pro Thr Ile Lys Ser Ile Phe Glu Arg Leu Arg Asn Phe
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Asp Ser Pro Lys Glu Tyr Pro Lys Phe Cys Gly Thr Phe Ala Ile
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                                     520
Leu His Val Arg Asp Ile Thr Thr Gly Tyr Asp Ser Ser Gln Pro
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Asn Lys Lys Ser Val Leu Pro Val Ser Lys Asn Ser Gln Met Ile
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Thr Phe Thr Phe Gln Asn Gly Cys Val Ala Thr Leu Arg Thr Ser
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Gly Thr Glu Pro Lys Ile Lys Tyr Tyr Ala Glu Met Cys Ala Ser
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                                     580
Pro Asp Gln Ser Asp Thr Ala Leu Leu Glu Glu Glu Leu Lys Lys
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Leu Ile Asp Ala Leu Ile Glu Asn Phe Leu Gln Pro Ser Lys Asn
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170
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Arg Ala Pro Asp Leu Gln Asp Leu Pro Trp Gln Asn Glu Pro Arg
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Pro Ala Asp Asp Gln Asp Asn Ala Arg Pro Cys Ala His Ala Val
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                  20
                                      25
Arg Ser Leu Lys Glu Ala Phe Ser Asn Phe Ser Ser Ser Thr Leu
                                                           45
                 35
                                      40
Thr Glu Val Gln Ala Ile Ser Thr His Gly Gly Ser Val Gly Asp
                                                           60
                                      55
                  50
Lys Ile Thr Ser Leu Gly Ala Lys Leu Glu Lys Gln Gln Gln Asp
                                      70
                  65
Leu Lys Ala Asp His Asp Ala Leu Leu Phe His Leu Lys His Phe
                                      85
                  80
Pro Val Asp Leu Arg Phe Val Ala Cys Gln Met Glu Leu Leu His
                 95
                                     100
                                                          105
Ser Asn Gly Ser Gln Arg Thr Cys Cys Pro Val Asn Trp Val Glu
                110
                                     115
His Gln Gly Ser Cys Tyr Trp Phe Ser His Ser Gly Lys Ala Trp
                                                          135
                125
                                     130
Ala Glu Ala Glu Lys Tyr Cys Gln Leu Glu Asn Ala His Leu Val
                 140
                                     145
Val Ile Asn Ser Trp Glu Glu Gln Lys Phe Ile Val Gln His Thr
                 155
                                     160
                                                          165
Asn Pro Phe Asn Thr Trp Ile Gly Leu Thr Asp Ser Asp Gly Ser
                170
                                     175
                                                          180
Trp Lys Trp Val Asp Gly Thr Asp Tyr Arg His Asn Tyr Lys Asn
                                     190
                                                          195
                 185
Trp Ala Val Thr Gln Pro Asp Asn Trp His Gly His Glu Leu Gly
                200
                                     205
                                                          210
Gly Ser Glu Asp Cys Val Glu Val Gln Pro Asp Gly Arg Trp
                                                          Asn
                 215
                                     220
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Asp Asp Phe Cys Leu Gln Val Tyr Arg Trp Val Cys Gly Lys Arg
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Arg Asn Ala Thr Gly Glu Val Ala
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Ala Asn Asp Val Leu Val Arg Trp Lys Arg Ala Gly Ser Tyr Leu
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                 35
Leu Glu Glu Leu Phe Glu Gly Asn Leu Glu Lys Glu Cys Tyr Glu
                                                          60
                                      55
                 50
Glu Ile Cys Val Tyr Glu Glu Ala Arg Glu Val Phe Glu Asn Glu
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Val Val Thr Asp Glu Phe Trp Arg Arg Tyr Lys Gly Lys Trp Phe
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Pro Ser Ser Pro Gln Lys Tyr
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Leu Arg Gln Ile Met Val Ile Ser Val Leu Ala Ala Ala Val Ser
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                                       40
Leu Leu Tyr Phe Ser Val Val Ile Ile Arg Asn Lys Tyr Gly Arg
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                                       55
                  50
Leu Thr Arg Asp Lys Lys Phe Gln Arg Tyr Leu Ala Arg Val Thr
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                  65
Asp Ile Glu Ala Thr Asp Thr Asn Asn Pro Asn Val Ser Tyr Gly
                                                           90
                                       85
                  80
Ile Val Val Asp Cys Gly Ser Ser Gly Ser Arg Val Phe Val Tyr
                  95
                                      100
                                                          105
Cys Trp Pro Arg His Asn Gly Asn Pro His Asp Leu Leu Asp
                                                          Ile
                                                           120
                 110
                                      115
Arg Gln Met Arg Asp Lys Asn Arg Lys Pro Val Val Met Lys
                                                          Ile
                                                           135
                 125
                                      130
Lys Pro Gly Ile Ser Glu Phe Ala Thr Ser Pro Glu Lys Val Ser
                                                           150
                                      145
                 140
Asp Tyr Ile Ser Pro Leu Leu Asn Phe Ala Ala Glu His Val Pro
                                                           165
                                      160
                 155
Arg Ala Lys His Lys Glu Thr Pro Leu Tyr Ile Leu Cys Thr Ala
                                                           180
                                      175
                 170
Gly Met Arg Ile Leu Pro Glu Ser Gln Gln Lys Ala Ile Leu Glu
                 185
                                      190
Asp Leu Leu Thr Asp Ile Pro Val His Phe Asp Phe Leu Phe Ser
                                                           210
                 200
                                      205
Asp Ser His Ala Glu Val Ile Ser Gly Lys Gln Glu Gly Val Tyr
                                                           225
                 215
                                      220
Ala Trp Ile Gly Ile Asn Phe Val Leu Gly Arg Phe Glu His Ile
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                                      235
 Glu Asp Asp Asp Glu Ala Val Val Glu Val Asn Ile Pro Gly Ser
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                                      250
 Glu Ser Ser Glu Ala Ile Val Arg Lys Arg Thr Ala Gly Ile Leu
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                 260
                                      265
Asp Met Gly Gly Val Ser Thr Gln Ile Ala Tyr Glu Val Pro Lys
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 Thr Glu Glu Val Ala Lys Asn Leu Leu Ala Glu Phe Asn Leu Gly
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Cys Asp Val His Gln Thr Glu His Val Tyr Arg Val Tyr Val Ala
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Thr Phe Leu Gly Phe Gly Gly Asn Ala Ala Arg Gln Arg Tyr Glu
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                                     325
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Asp Arg Ile Phe Ala Asn Thr Ile Gln Lys Asn Arg Leu Leu Gly
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                                                         345
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Lys Gln Thr Gly Leu Thr Pro Asp Met Pro Tyr Leu Asp Pro Cys
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                                                          360
                350
Leu Pro Leu Asp Ile Lys Asp Glu Ile Gln Gln Asn Gly Gln Thr
                                     370
                                                          375
                365
Ile Tyr Leu Arg Gly Thr Gly Asp Phe Asp Leu Cys Arg Glu Thr
                                                          390
                                     385
                380
Ile Gln Pro Phe Met Asn Lys Thr Asn Glu Thr Gln Thr Ser Leu
                                                          405
                                     400
                395
Asn Gly Val Tyr Gln Pro Pro Ile His Phe Gln Asn Ser Glu Phe
                                     415
                                                          420
                 410
Tyr Gly Phe Ser Glu Phe Tyr Tyr Cys Thr Glu Asp Val Leu Arg
                                                          435
                                     430
                 425
Met Gly Gly Asp Tyr Asn Ala Ala Lys Phe Thr Lys Ala Ala Lys
                                                          450
                                     445
                 440
Asp Tyr Cys Ala Thr Lys Trp Ser Ile Leu Arg Glu Arg Phe Asp
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Arg Gly Leu Tyr Ala Ser His Ala Asp Leu His Arg Leu Lys
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Asp Ala Ile Tyr Gln Asn Leu Thr Gln Leu Lys Ala Ala Val Gly
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                                       40
Glu Leu Ser Glu Lys Ser Lys Leu Gln Glu Ile Tyr Gln Glu Leu
Thr Gln Leu Lys Ala Ala Val Gly Glu Leu Pro Glu Lys Ser Lys
                                       70
Leu Gln Glu Ile Tyr Gln Glu Leu Thr Arg Leu Lys Ala Ala Val
                                       85
                  80
Gly Glu Leu Pro Glu Lys Ser Lys Leu Gln Glu Ile Tyr Gln Glu
                  95
                                      100
Leu Thr Arg Leu Lys Ala Ala Val Gly Glu Leu Pro Glu Lys Ser
                 110
                                      115
Lys Leu Gln Glu Ile Tyr Gln Glu Leu Thr Gln Leu Lys Ala Ala
                                      130
Val Gly Glu Leu Pro Asp Gln Ser Lys Gln Gln Gln Ile Tyr Gln
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                                                           150
                 140
Glu Leu Thr Asp Leu Lys Thr Ala Phe Glu Arg Leu Cys Arg His
                                                           165
                                      160
                 155
Cys Pro Lys Asp Trp Thr Phe Phe Gln Gly Asn Cys Tyr Phe Met
                 170
                                      175
Ser Asn Ser Gln Arg Asn Trp His Asn Ser Val Thr Ala Cys Gln
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                 185
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Glu Val Arg Ala Gln Leu Val Val Ile Lys Thr Ala Glu Gln

Lys Lys Pro Ala Pro Arg Phe Arg Asp Glu

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185

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Ile Leu Phe Leu Ser Ala Cys Phe Ile Thr Arg Cys Val Val Thr
                                                           45
                                      40
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Phe Arg Ile Phe Gln Thr Cys Asp Glu Lys Lys Phe Gln Leu Pro
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Glu Asn Phe Thr Glu Leu Ser Cys Tyr Asn Tyr Gly Ser Ala Ser
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Gly Met
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Leu Leu Leu Asp Pro His Ser Pro Glu Thr Gly Cys Pro Pro Leu
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                 20
Arg Arg Phe Glu Tyr Lys Leu Ser Phe Lys Gly Pro Arg Leu Ala
                                      40
                                                           45
                 35
Leu Pro Gly Ala Gly Ile Pro Phe Trp Ser His His Gly Asp Ala
                                      55
                                                           60
                 50
Ile Leu Gly Leu Glu Glu Val Arg Leu Thr Pro Ser Met Arg Asn
                                                           75
                 65
                                      70
Arg Ser Gly Ala Val Trp Ser Arg Ala Ser Val Pro Phe Ser Ala
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                 80
                                      85
Trp Glu Val Glu Val Gln Met Arg Val Thr Gly Leu Gly Arg Arg
                                                          105
                 95
                                     100
Gly Ala Gln Gly Met Ala Val Trp Tyr Thr Arg Gly Arg Gly His
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                                     115
                                                          120
Val Gly Ser Val Leu Gly Gly Leu Ala Ser Trp Asp Gly Ile Gly
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Ile Phe Phe Asp Ser Pro Ala Glu Asp Thr Gln Asp Ser Pro Ala
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                                     145
Ile Arg Val Leu Ala Ser Asp Gly His Ile Pro Ser Glu Gln Pro
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                                     160
Gly Asp Gly Ala Ser Gln Gly Leu Gly Ser Cys His Trp Asp Phe
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175

190

. 205

195

210

Arg Asn Arg Pro His Pro Phe Arg Ala Arg Ile Thr Tyr Trp Gly

Gln Arg Leu Arg Met Ser Leu Asn Ser Gly Leu Thr Pro Ser Asp

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Pro Asp Asp His Asp Val Leu Ser Phe Leu Thr Phe Ser Leu Ser
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                215
Glu Pro Ser Pro Glu Val Pro Pro Gln Pro Phe Leu Glu Met Gln
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                 230
Gln Leu Arg Leu Ala Arg Gln Leu Glu Gly Leu Trp Ala Arg Leu
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                                     250
                 245
Gly Leu Gly Thr Arg Glu Asp Val Thr Pro Lys Ser Asp Ser Glu
                                     265
                                                          270
                 260
Ala Gln Gly Glu Gly Glu Arg Leu Phe Asp Leu Glu Glu Thr Leu
                                                          285
                                     280
                 275
Gly Arg His Arg Arg Ile Leu Gln Ala Leu Arg Gly Leu Ser Lys
                                                          300
                                      295
                 290
Gln Leu Ala Gln Ala Glu Arg Gln Trp Lys Lys Gln Leu Gly Pro
                                      310
                 305
Pro Gly Gln Ala Arg Pro Asp Gly Gly Trp Ala Leu Asp Ala Ser
                                                           330
                                      325
                 320
Cys Gln Ile Pro Ser Thr Pro Gly Arg Gly Gly His Leu Ser Met
                                                          345
                                      340
                 335
Ser Leu Asn Lys Asp Ser Ala Lys Val Gly Ala Leu Leu His Gly
                                                           360
                                      355
                 350
Gln Trp Thr Leu Leu Gln Ala Leu Gln Glu Met Ser Arg Gln Glu
                                      370
                                                           375
                 365
Leu Asn Lys Ser Leu Gln Glu Cys Leu Ser Thr Gly Ser Leu Pro
                                      385
                                                           390
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Leu Gly Pro Ala Pro His Thr Pro Arg Ala Leu Gly Ile Leu Met
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Arg Gln Pro Leu Pro Ala Ser Met Pro Ala
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Tyr Asp Leu Leu Asp Thr Ala Met Ile Asn Asn Ser Arg Asn Leu
                                    190
                185
Asn Ile Gln Leu Lys Trp Lys Arg Pro Pro Glu Asn Glu Ala Pro
                                     205
                200
Pro Val Pro Phe Leu Arg Ala Gln Arg Tyr Val Ser Gly Tyr Gly
                                                         225
                                     220
                215
Leu Gln Lys Gly Glu Leu Ser Thr Leu Leu Tyr Asn Thr His Pro
                                     235
                230
Tyr Arg Ala Phe Pro Val Leu Leu Asp Thr Val Pro Trp Tyr
                                     250
                245
Leu Arg Leu Tyr Val His Thr Leu Thr Ile Thr Ser Lys Gly Lys
                260
                                     265
Glu Asn Lys Pro Ser Tyr Ile His Tyr Gln Pro Ala Gln Asp Arg
                                                          285
                                     280
                275
Leu Gln Pro His Leu Leu Glu Met Leu Ile Gln Leu Pro Ala Asn
                                                          300
                                     295
                290
Ser Val Thr Lys Val Ser Ile Gln Phe Glu Arg Ala Leu Leu Lys
                                                          315
                305
                                     310
Trp Thr Glu Tyr Thr Pro Asp Pro Asn His Gly Phe Tyr Val Ser
                                                          330
                320
                                     325
Pro Ser Val Leu Ser Ala Leu Val Pro Ser Met Val Ala Ala Lys
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Pro Val Asp Trp Glu Glu Ser Pro Leu Phe Asn Ser Leu Phe Pro
                                     355
                                                          360
                350
Val Ser Asp Gly Ser Asn Tyr Phe Val Arg Leu Tyr Thr Glu Pro
                                     370
                365
Leu Leu Val Asn Leu Pro Thr Pro Asp Phe Ser Met Pro Tyr Asn
                                                          390
                                     385
                380
Val Ile Cys Leu Thr Cys Thr Val Val Ala Val Cys Tyr Gly Ser
                                                          405
                                     400
                 395
Phe Tyr Asn Leu Leu Thr Arg Thr Phe His Ile Glu Glu Pro Arg
                                                          420
                                     415
                 410
Thr Gly Gly Leu Ala Lys Arg Leu Ala Asn Leu Ile Arg Arg
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Arg Gly Val Pro Pro Leu
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Thr Pro Tyr Asp Gly Val Phe Ile Ala Leu Leu Val Glu Glu Gly
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                                                         135
His Thr His Asp Ile Leu Ala Ala Gly Phe Asp Gly Met Tyr Thr
                                                          150
                140
                                     145
Tyr Phe Ala Ser Asn Gly Phe Ser Phe Gly Ser Ser His Gln Asn
                                                          165
                                     160
                155
Trp Lys Ala Val Lys Asn Phe Cys Asp Ala Asn Asn Leu Met Phe
                                     175
                170
Ile Pro Ser Val Gly Pro Gly Tyr Ile Asp Thr Ser Ile Arg Pro
                                                          195
                                     190
                185
Trp Asn Asn His Asn Thr Arg Asn Arg Val Asn Gly Lys Tyr Tyr
                                                          210
                                     205
                200
Glu Thr Ala Leu Gln Ala Ala Leu Thr Val Arg Pro Glu Ile Val
                                                          225
                                     220
                215
Ser Ile Thr Ser Phe Asn Glu Trp His Glu Gly Thr Gln Ile Glu
                                                          240
                                     235
                230
Lys Ala Ile Pro Lys Lys Thr Pro Thr Arg Leu Tyr Leu Asp Tyr
                                     250
                 245
Leu Pro His Gln Pro Ser Leu Tyr Leu Glu Leu Thr Arg Arg Trp
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                                     265
Ala Glu His Phe Ile Lys Glu Lys Glu Gln Trp Leu Met
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Leu Lys Tyr Gln Pro Met Met Gln Thr Ile Gly Gln Lys Tyr Cys
                  35
                                       40
Met Asp Pro Ala Val Ile Ala Gly Val Leu Ser Arg Lys Ser Pro
                                                            60
                                       55
                  50
Gly Asp Lys Ile Leu Val Asn Met Gly Asp Arg Thr Ser Met Val
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                  65
Gln Asp Pro Gly Ser Gln Ala Pro Thr Ser Trp Ile Ser Glu Ser
                                       85
                                                            90
                  80
Gln Val Ser Gln Thr Thr Glu Val Leu Thr Thr Arg Ile Lys Glu
                                                           105
                 95
                                      100
 Ile Gln Arg Arg Phe Pro Thr Trp Thr Pro Asp Gln Tyr Leu Arg
                                                           120
                                      115
                 110
Gly Gly Leu Cys Ala Tyr Ser Gly Gly Ala Gly Tyr Val Arg Ser
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                                                           135
                 125
 Ser Gln Asp Leu Ser Cys Asp Phe Cys Asn Asp Val Leu Ala Arg
                                                           150
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 Ala Lys Tyr Leu Lys Arg His Gly Phe
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Glu Leu Asn Lys Ser Leu Gln Glu Cys Leu Ser Thr Gly Ser Leu
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 Arg Ser Gly Ala Val Trp Ser Arg Ala Ser Val Pro Phe Ser Ala
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 Trp Glu Val Glu Val Gln Met Arg Val Thr Gly Leu Gly Arg Arg
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 Gly Ala Gln Gly Met Ala Val Trp Tyr Thr Arg Gly Arg Gly His
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 Val Gly Ser Val Leu Gly Gly Leu Ala Ser Trp Asp Gly Ile Gly
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 Ile Phe Phe Asp Ser Pro Ala Glu Asp Thr Gln Asp Ser Pro Ala
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Gln Arg Leu Arg Met Ser Leu Asn Ser Gly Leu Thr Pro Ser Asp
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Ile Pro Ser Thr Pro Gly Arg Gly Gly His Leu Ser Met Ser Leu
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 Glu Thr Ala Trp Ser Cys Cys Pro Lys Asn Trp Lys Ser Phe Ser
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Asn Thr Gln Glu Glu Gln Asp Phe Ile Phe Gln Asn Leu Gln Glu
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His Trp Gln Trp Val Asp Gln Thr Pro Tyr Asn Glu Ser Ser Ala
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Phe Trp His Pro Arg Glu Pro Ser Asp Pro Asn Glu Arg Cys Val
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Val Leu Asn Phe Arg Lys Ser Pro Lys Arg Trp Gly Trp Asn Asp
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Gly Glu Val Gly Ala Pro Gly Met Gln Gly Ser Ala Gly Ala Arg
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Gly Leu Ala Gly Pro Lys Gly Glu Arg Gly Val Pro Gly Glu Arg
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Gly Val Pro Gly Asn Ala Gly Ala Ala Gly Ser Ala Gly Ala Met
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Gly Pro Gln Gly Ser Pro Gly Ala Arg Gly Pro Pro Gly Leu Lys
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Gly Asp Lys Gly Ile Pro Gly Asp Lys Gly Ala Lys Gly Glu Ser
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Gly Leu Pro Asp Val Ala Ser Leu Arg Gln Gln Val Glu Ala Leu
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Gln Gly Gln Val Gln His Leu Gln Ala Ala Phe Ser Gln Tyr Lys
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Leu Cys Thr Gln Ala Gly Gly Gln Leu Ala Ser Pro Arg Ser Ala
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Ala Glu Asn Ala Ala Leu Gln Gln Leu Val Val Ala Lys Asn Glu
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Thr Tyr Pro Thr Gly Glu Ser Leu Val Tyr Ser Asn Trp Ala Pro
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Asp Val Ala Phe His Phe Asn Pro Arg Phe Lys Arg Ala Gly Cys
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Ile Val Cys Asn Thr Leu Ile Asn Glu Lys Trp Gly Arg Glu Glu
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Ile Thr Tyr Asp Thr Pro Phe Lys Arg Glu Lys Ser Phe Glu Ile
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Val Ile Met Val Leu Lys Asp Lys Phe Gln Val Pro Lys Ser Gly
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Thr Pro Gln Leu Ser Leu Pro Phe Ala Ala Arg Leu Asn Thr Pro
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Met Gly Pro Gly Arg Thr Val Val Lys Gly Glu Val Asn Ala
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Asn Ala Lys Ser Phe Asn Val Asp Leu Leu Ala Gly Lys Ser Lys
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Asp Ile Ala Leu His Leu Asn Pro Arg Leu Asn Ile Lys Ala Phe
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Val Arg Asn Ser Phe Leu Gln Glu Ser Trp Gly Glu Glu Arg
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Asn Ile Thr Ser Phe Pro Phe Ser Pro Gly Met Tyr Phe Glu Met
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Tyr Cys Tyr Tyr Phe Asn Glu Asp Pro Glu Thr Trp Val Asp Ala
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